

Figure 1. Amino Acid Sequences of Murine 1A6 and Human Consensus Sequences of Heavy Chain Subgroup III (HumIII) and Light Chain κ Subgroup I (HumκI).

V_H Domain

Mouse1A6	1	11	21	31	41	
	EVQLQQSGAE	LVKPGASLKL	SCTASGFNIK	DTYIHWMKQR	PEQGLEW I GR	
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HumIII	EVQLVESGGG	LVQPGGSLRL	SCAASGFNFS	-----WVRQA	PGKGLEWVA—	
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Mouse1A6	51 a	61	71	81 a bc	91	
	IDPANDNTIYD	PKVQGKATMT	ADTSS NTAYL	QLNSLTSEDTAVY	YCTT	
	* * * * *	* * *	* * *	*	**	

HumIII	-----A	DSVKGRFT IS	RDDSKNTAYL	QMNSLRAEDTAVY	YCTT	
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Mouse1A6	103	111				
	SGYWFA	YWGQGTLVT	VSS			

HumIII	-----WGQGTLVT	VSS				
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V_L Domain

Mouse1A6	1	11	21	31	41	51	
	DIVLTQSPAT	LSVTPGDSVS	LSCRASQHSIS	NNLHWYQQKH	SESPRLLIKH	ASQ	
	* *	* *	***	* * *		* ***	* *

HumκI	DIQMTQSPSS	LSASVGDRVT	ITC-----	-----WYQQKP	GKAPKLLIY	--	-----
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Mouse1A6	61	71	81	91	101		
	SISG I PS	RFSGSGSGTD	FTLSINSVET	EDFGMFFCQQ	SNSWPYTFGG	GTKLEIKR	
	*		***	***	*	*	

HumκI	---GVPS	RFSGSGSGTD	FTLTSSLQP	EDFATYYC	-----FGQ	GTKVEIKR	
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The CDR residues as defined by both Kabat and Chothia are shown in boldface.

Fig. 2A

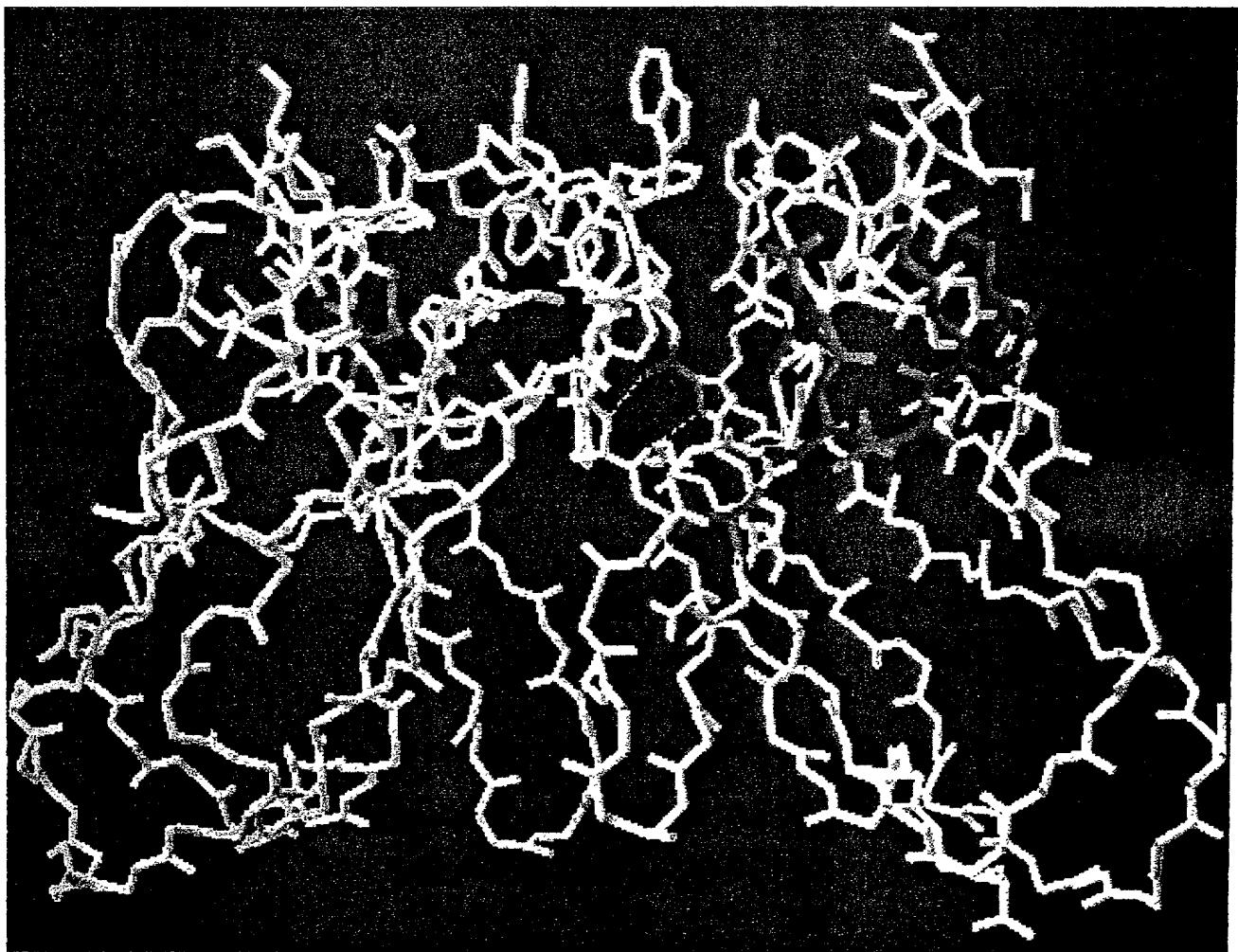
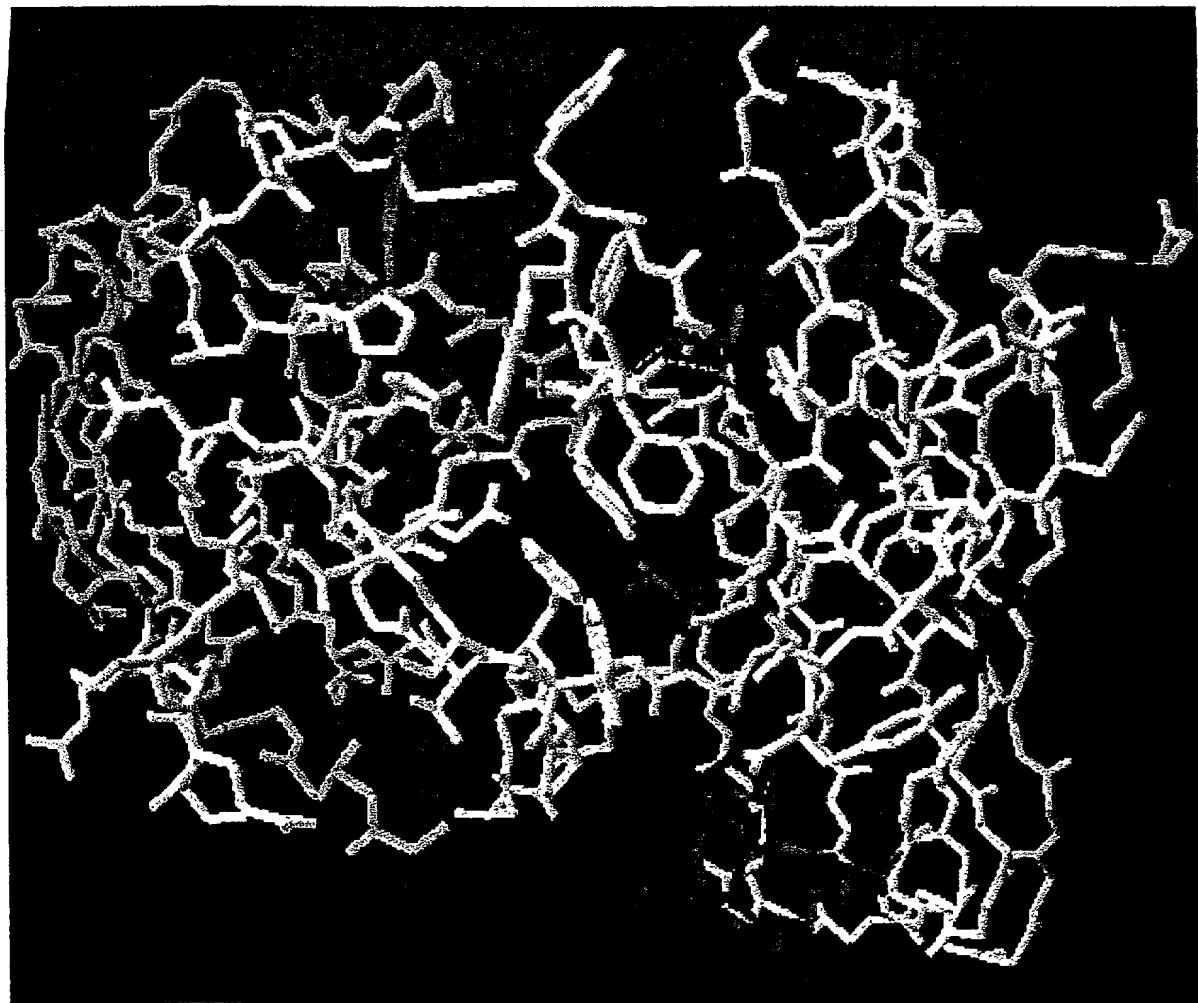


Fig. 2B



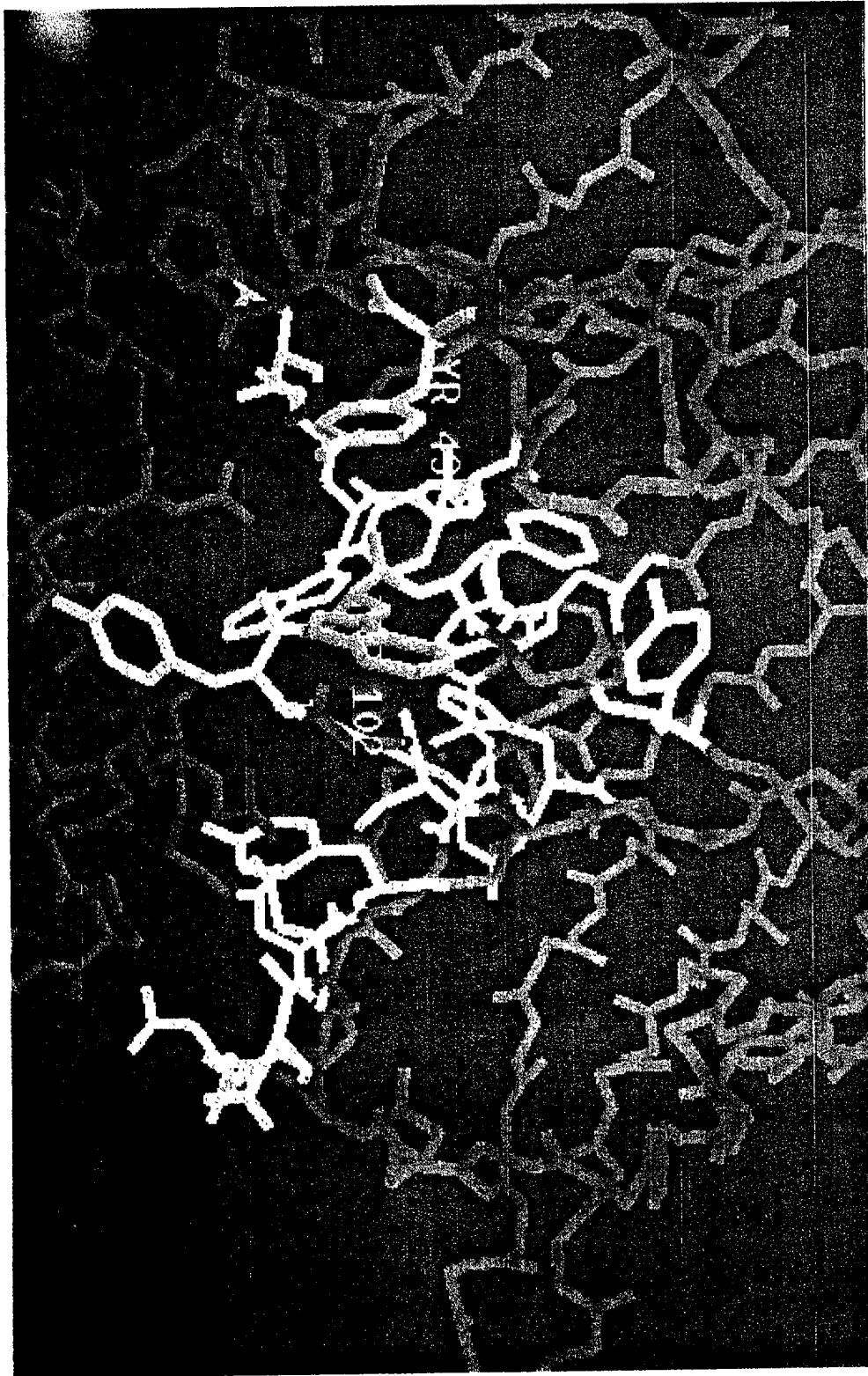


Fig. 2C

Figure 3. Amino Acid Sequences of Murine 1A6, Humanized 1A6 (Hum19), and Human Consensus Sequences of Heavy Chain Subgroup III (HumIII) and Light Chain κ Subgroup I (HumκI).

V_H Domain						
	1	11	21	31	41	
Mouse	EVQLQQSGAE	LVKPGASLKL	SCTASGFNIK	DTYIHW MKQR	PEQGLEWI GR	
	* * *	*	*	*	*	
Hum19	EVQLVESGGG	LVQP gg SLRL	SCAASGFNIK	DTYIHW VRQA	PGKGLEWVAR	
HumIII	EVQLVESGGG	LVQP gg SLRL	SCAASGFNFS	-----	WVRQA	PGKGLEWVA-----
	51 a	61	71	81 a bc	91	
Mouse	IDPANDNTIYD	PKVQGKATMT	ADTSS NTAYL	QL NSLTSEDTAVY	YCT T	
	* * * * ..*	*	*	*	*	
Hum19	IDPANDNTIYA	DSVKG RFT IS	SDDSKNTAYL	QMNSLRAEDTAVY	YCTA	
HumIII	-----	A DSVKG RFT IS	RDDSKNTAYL	QMNSLRAEDTAVY	YCTR	
	103	111				
Mouse	SGYWFA	YWggGTLVT	VSS			
Hum19	SGYWFA	YWggGTLVT	VSS			
HumIII	-----	WGggGTLVT	VSS			
V_L Domain						
	1	11	21	31	41	51
Mouse	DIVLTQSPAT	LSVTPGDSVS	LSCRASQSIS	NNLHWYQQKH	SESPRLLIKH ASQ	
	* *	**	***	*	***	
Hum19	DIQMTQSPSS	LSASVGDRV t	ITCRASQSIS	NNLHWYQQKP	GKAPKLLIYH ASQ	
HumκI	DIQMTQSPSS	LSASVGDRV t	ITC-----	-----	WYQQKP GKAPKLLIY	-----
	61	71	81	91	101	
Mouse	SISG I PS	RFSGSGSGTD	FTLSINSVET	EDFGMFFCQQ	SNSWPYTFGG	GTKLEIKR
	*		***	***		*
Hum19	SISGVPS	RFSGSGSGTD	FTLTiSSLQP	EDFATYYCQQ	SNSWPYTFGQ	GTKVEIKR
HumκI	---GVPS	RFSGSGSGTD	FTLT i SSLQP	EDFATYYC	-----	FGQ GTKVEIKR

The CDR residues as defined by both Kabat and Chothia are shown in boldface.

Figure 4. cDNA Sequences of Humanized scFv3 (Hum3) [SEQ ID. 2].

The restriction sites are underlined. CCATGG NCO I SITE; GGATCC BAMH I SITE;
GTTAAC HPA I SITE

CGAACCATGGCGATATCcagatgACCCAATCTCCGtctagcCTGAGCgccAG
TgttGGTgatCGAGTTaccattactTGCCCGGCCAGCCAATCTATCAGTAATAATCTTC
ACTGGTATCAACAAaaacccggtaaagctCCGaaaCTTCTTATCAAACACGCCTCTCAG
AGCATTAGCGGCgttCCGAGCCGCTCTGGCTCTGGCTCGGGCACGGACTTT
ACCCTTaccATCAGCTCTtcagccgGAAGACtttGCCaccTATtatTGTCA
GAGCAGTCTAA
TAGCTGGCGTATACTTCGGTcaaGGTACCAAGgtcGAGATTAAGCGCGGCGG
TGGCGGTTCTGGTGGCggtagcggtagcGGTGGATCCGGTGGCGTGGCAGCGA
AGTTCAACTTGTGAGTCTGGTGGCGGTCTGGTTCAAGCAGTACATCCATTGG
GCCTGTCTTGCAGCAAGCGTTCAACATTAAGGACACCTACATCCATTGG
atgAGGCAAGCTCCGGTAAGGGTCTGGAGTGGGACGTATCGACCCGGC
AAACGACAACACCATTACGATCCGAAGGTGCAGGGCCGTTTACTatgTCTGC
GGACacCTCTAAGAACACCGCGTACCTCAGATGAACCTCTGCGTGCCGAGG
ACACCGCCGTACTACTGCACGACCTCTGGCTACTGGTTGCCTACTGGGGC
CAGGGCACGCTTGTCAACCGTCTCTGGTTtAaCCC

Figure 5. Protection of HRV15 infection by mouse 1A6 scFv (Ms1) and humanized 1A6 scFv proteins (Hs3, 4, 7, 17, 18, 19 and 21).

